

- 1 1. A tension adjusting device attached to an axle member of a driven wheel of a
2 vehicle and coupled to a forked frame member to adjust a tension of a flexible
3 power transmission means that transfers power from a drive shaft of said vehicle
4 to said driven wheel, said tension adjusting device comprising:
- 5 a first tension adjuster joined to a first side of said axle member, said first
6 tension adjuster comprising:
- 7 a first adjustment plate having a first dimension to slidably engage a
8 guide recess of a first fork of said forked frame member and a
9 second dimension sufficient to support a first axle fastener to said
10 axle member to said first adjustment plate, said first adjustment
11 plate including:
- 12 an extending member that extends over an end of said first fork,
- 13 an axle bore through which said first side of said axle member
14 passes to receive the first axle fastener to secure said axle
15 member to said first adjustment plate and couple said first
16 adjustment plate to said first fork of said forked frame
17 member, and
- 18 a capturing recess inlet into said first adjustment plate to secure
19 first axle fastener to prevent movement of said first axle
20 fastener during the coupling of the driven wheel, and

21 an adjustment bore through said extending member, said
22 adjuster bore aligned with said end of said first fork, and
23 a first adjustment stud affixed through said adjustment bore to said first
24 adjustment plate such that said adjustment stud is in contact with
25 the end of said first fork to allow the axle member of the driven
26 wheel to move in an adjustment slot within said guide recess to
27 adjust the tension of the power transmission means;

28 a second tension adjuster joined to a second side of said axle member,
29 said second tension adjuster comprising:

30 a second adjustment plate having a first dimension to slidably engage
31 a guide recess of a second fork of said forked frame member and a
32 second dimension sufficient to support a second axle fastener to
33 said axle member to said second adjustment plate, said second
34 adjustment plate including:

35 an extending member that extends over an end of said second
36 fork,

37 an axle bore through which said second side of said axle
38 member passes to receive the second axle fastener to
39 secure said axle member to said second adjustment plate
40 and couple said second adjustment plate to said second fork
41 of said forked frame member, and

42 an adjustment bore through said extending member, said
43 adjuster bore aligned with said end of said second fork, and
44 a second adjustment stud affixed through said adjustment bore to said
45 second adjustment plate such that said adjustment stud is in
46 contact with the end of said second fork to allow the axle member
47 of the driven wheel to move in an adjustment slot within said guide
48 recess to adjust the tension of the power transmission means.

1 2. The tension adjusting device of claim 1 wherein said device is used to replace a
2 tension adjusting device integrated within said forked frame member and placed
3 forward of the axle member within said guide recesses of the first and second
4 forks.

1 3. The tension adjusting device of claim 1 wherein the first and second adjustment
2 plates are formed of materials selected from the group of materials comprising
3 steel, aluminum, titanium and carbon epoxy.

1 4. The tension adjusting device of claim 1 wherein the first tension adjuster further
2 comprises a *captivating nut* secured to the first adjustment plate within said
3 adjustment bore to accept said first adjustment stud.

1 5. The tension adjusting device of claim 1 wherein the second tension adjuster
2 further comprises a *captivating nut* secured to the second adjustment plate within
3 said adjustment bore to accept said second adjustment stud.

- 1 6. The tension adjusting device of claim 1 wherein the first and second adjustment
2 studs are threaded and include a securing nut which, when said first and second
3 adjusting studs have moved said driven wheel such that said flexible power
4 transmission means has a correct tension, said securing nut for the first and
5 second adjustment studs are placed to lock said first and second adjustment
6 studs respectively to the first and second adjustment plates.
- 1 7. The tension adjusting device of claim 1 wherein the first and second adjustment
2 plates each include at least one guide marking placed to insure that the axel
3 member is oriented with respect to said forked frame member.
- 1 8. The tension adjusting device of claim 1 wherein the flexible power transmission
2 means is a chain and said chain is engaged with teeth of a sprocket coupled to
3 said driven wheel.
- 1 9. The tension adjusting device of claim 1 wherein the flexible power transmission
2 means is a belt and said belt is placed on a pulley coupled to said driven wheel.
- 1 10. A tension adjusting device attached to an axle member of a driven wheel of a
2 vehicle and coupled to a forked frame member to adjust tension of a flexible
3 power transmission means that transfers power from a drive shaft of said vehicle
4 to said driven wheel, said tension adjusting device comprising:

5 a tension adjuster joined to one side of said axle member, said first
6 tension adjuster comprising:

7 an adjustment plate with a first dimension to slidably engage a guide
8 recess of a fork of said forked frame member and a second
9 dimension sufficient to support an axle fastener to said axle
10 member to said adjustment plate, said adjustment plate including:

11 an extending member that extends over an end of said fork,

12 an axle bore through which said side of said axle member
13 passes to receive the axle fastener to secure said axle
14 member to said first adjustment plate and couple said first
15 adjustment plate to said first fork of said forked frame
16 member, and

17 an adjustment bore through said extending member, said
18 adjuster bore aligned with said end of said fork, and

19 a first adjustment stud affixed through said adjustment bore to said
20 adjustment plate such that said adjustment stud is in contact with
21 the end of said fork to allow the axle member of the driven wheel to
22 move in an adjustment slot within said guide recess to adjust the
23 tension of the power transmission means.

1 11. The tension adjusting device of claim 10 wherein the adjustment plate further
2 comprises:

3 a capturing recess inlet into said adjustment plate that secures said axle
4 fastener to prevent movement of said axle fastener during the coupling
5 of the driven wheel.

1 12. The tension adjusting device of claim 10 wherein said device is used to replace a
2 tension adjusting device integrated within said forked frame member and placed
3 forward of the axle member within said guide recesses of the first and second
4 forks.

1 13. The tension adjusting device of claim 10 wherein the adjustment plates are
2 formed of materials selected from the group of materials comprising steel,
3 aluminum, titanium and carbon epoxy.

1 14. The tension adjusting device of claim 10 wherein the tension adjuster further
2 comprises a captivating nut secured to the first adjustment plate within said
3 adjustment bore to accept said first adjustment stud.

1 15. The tension adjusting device of claim 10 wherein the adjustment stud is threaded
2 and includes a securing nut which, when said adjusting stud has moved said
3 driven wheel such that said flexible power transmission means has a correct
4 tension, said securing nut for the adjustment stud is placed to lock said
5 adjustment stud to the adjustment plate.

1 16. The tension adjusting device of claim 10 wherein the adjustment plates include at
2 least one guide marking placed to insure that the axel member is oriented with
3 respect to said forked frame member.

1 17. The tension adjusting device of claim 10 wherein the flexible power transmission
2 means is a chain and said chain is engaged with teeth of a sprocket coupled to
3 said driven wheel.

1 18. The tension adjusting device of claim 10 wherein the flexible power transmission
2 means is a belt and said belt is placed on a pulley coupled to said driven wheel.

1 19. A method to replace an original equipment tension adjusting device attached to
2 an axle member of a driven wheel of a vehicle and coupled to a forked frame
3 member to adjust tension of a flexible power transmission means that transfers
4 power from a drive shaft of said vehicle to said driven wheel, said method
5 comprising the steps of:

6 removing said original equipment tension adjusting device from said
7 forked frame member and said axle member;

8 providing a replacement tension adjusting device, said replacement
9 tension adjusting device comprising:

10 a first tension adjuster joined to a first side of said axle member, said
11 first tension adjuster comprising:

12 a first adjustment plate having a first dimension to slidably
13 engage a guide recess of a first fork of said forked frame
14 member and a second dimension sufficient to support a first

15 axle fastener to said axle member to said first adjustment
16 plate, said first adjustment plate including:

17 an extending member that extends over an end of said first
18 fork,

19 an axle bore through which said first side of said axle
20 member passes to receive the first axle fastener to
21 secure said axle member to said first adjustment plate
22 and couple said first adjustment plate to said first fork of
23 said forked frame member,

24 a capturing recess inlet into said first adjustment plate to
25 secure a first axle fastener to prevent movement of said
26 first axle fastener during the coupling of the driven wheel,
27 and

28 an adjustment bore through said extending member, said
29 adjuster bore aligned with said end of said first fork, and

30 a first adjustment stud affixed through said adjustment bore to
31 said first adjustment plate such that said adjustment stud is
32 in contact with the end of said first fork to allow the axle
33 member of the driven wheel to move in an adjustment slot
34 within said guide recess to adjust the tension of the power
35 transmission means;

36 a second tension adjuster joined to a second side of said axle member,
37 said second tension adjuster comprising:

38 a second adjustment plate having a first dimension to slidably
39 engage a guide recess of a second fork of said forked frame
40 member and a second dimension sufficient to support a
41 second axle fastener to said axle member to said second
42 adjustment plate, said second adjustment plate including:

43 an extending member that extends over an end of said
44 second fork,

45 an axle bore through which said second side of said axle
46 member passes to receive the second axle fastener to
47 secure said axle member to said second adjustment
48 plate and couple said second adjustment plate to said
49 second fork of said forked frame member, and

50 an adjustment bore through said extending member, said
51 adjuster bore aligned with said end of said second fork,
52 and

53 a second adjustment stud affixed through said adjustment bore
54 to said second adjustment plate such that said adjustment
55 stud is in contact with the end of said second fork to allow
56 the axle member of the driven wheel to move in an

57 adjustment slot within said guide recess to adjust the tension
58 of the power transmission means;

59 installing said replacement tension adjusting device on axle member;

60 placing said driven wheel with said replacement tension adjusting
61 device between the first and second fork of said forked frame
62 member;

63 coupling said flexible power transmission means to said driven wheel;

64 modifying placement of said driven wheel such that the extending
65 members of the first and second adjustment plates are aligned
66 respectively with the ends of first and second ends of the forked
67 frame member;

68 modifying placement of said driven wheel to adjust the flexible power
69 transmission means to a preliminary tension; and

70 varying the first and second adjustment studs to move said driven
71 wheel incrementally to adjust the flexible power transmission
72 means to a final tension.

1 20. The method of claim 19 wherein the first and second adjustment plates are
2 formed of materials selected from the group of materials comprising steel,
3 aluminum, titanium and carbon epoxy.

- 1 21. The method of claim 19 wherein the first tension adjuster further comprises a
2 captivating nut secured to the first adjustment plate within said adjustment bore
3 to accept said first adjustment stud.
- 1 22. The method of claim 19 wherein the second tension adjuster further comprises a
2 captivating nut secured to the second adjustment plate within said adjustment
3 bore to accept said second adjustment stud.
- 1 23. The method of claim 19 wherein the first and second adjustment studs are
2 threaded and include a securing nut.
- 1 24. The method of claim 23 further comprising the step of locking said first and
2 second adjustment studs respectively to the first and second adjustment plates
3 with said securing nut, when said first and second adjusting studs have moved
4 said driven wheel such that said flexible power transmission means has the final
5 tension.
- 1 25. The method of claim 19 wherein the first and second adjustment plates each
2 include at least one guide marking placed to insure that the axel member is
3 oriented with respect to said forked frame member.
- 1 26. The method of claim 25 wherein varying the first and second adjustment studs to
2 move said driven wheel incrementally comprises the steps of:

3 selectively adjusting one of the first and second adjustment studs to move
4 said driven wheel such that the flexible power transmission means is at
5 the final tension;

6 noting location of the axle member within the forked frame member by
7 location of said guide marking; and

8 adjusting the other of the first and second adjustment studs to move said
9 axle member to align with guide marking.

1 27. The method of claim 19 wherein the flexible power transmission means is a chain
2 and said chain is engaged with teeth of a sprocket coupled to said driven wheel.

1 28. The method of claim 19 wherein the flexible power transmission means is a belt
2 and said belt is placed on a pulley coupled to said driven wheel.